

A Highly Controlled and Useful Polymerization Technique

Never Stand Still

NewSouth Innovations

A simple, widely applicable technique to produce polymers to meet your customers' needs

The Technology

This invention is a new living free-radical polymerization technique which uses the external stimulus light as a trigger, and is oxygen tolerant.

This invention allows for a high degree of control over the polymerization activation and deactivation such that well-defined polymer structures can be prepared with a narrow molecular weight distribution.

This technique is applicable to a wide range of monomers, including both conjugated and unconjugated monomers.



Advantages

- Low polydispersity index (~1.1).
- Visible light induced polymerization.
- Oxygen tolerant.
- ON/OFF control of the polymerisation reaction.
- Ultrafast.
- Mild reactions conditions.
- Minimal catalyst used (<1 ppm).
- Nontoxic.
- Simple reaction setup.

Applications

- Surface coating and modification, eg. fibre functionalization.
- Nanolithography, eg. silicon wafer and conducting glasses.
- Biotechnology, eg. protein modification.
- Additive manufacturing.
- Multiblock copolymers.

Key Benefits

High quality, targeted polymers produced
Tight control over: reaction rate and duration, polymer molecular weight distribution, and the resulting polymer architectures formed.

Safe, energy efficient, and mild
Oxygen-tolerant, room temperature, water as solvent, ultrafast, and resulting in non-toxic products.

The Opportunity

We are seeking research collaborators and industry partners to further develop this technology.

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